[A few questions of mine are in these brackets as the home work proceeds. Thank you.]

1. Write and execute the SQL command to list the total sales by region and customer. Your output should be sorted by region and customer. **Here's my answer**:

```
SELECT REG_ID, S.CUS_CODE, SUM(SALE_UNITS*SALE_PRICE) AS TOTSALES
FROM DWDAYSALESFACT S JOIN DWCUSTOMER C ON S.CUS_CODE = C.CUS_CODE
GROUP BY REG_ID, S.CUS_CODE
ORDER BY REG_ID, S.CUS_CODE;
```

```
saleco_dw=> SELECT REG_ID, S.CUS_CODE, SUM(SALE_UNITS*SALE_PRICE) AS TOTSALES
FROM DWDAYSALESFACT S JOIN DWCUSTOMER C ON S.CUS_CODE = C.CUS_CODE
GROUP BY REG_ID, S.CUS_CODE
ORDER BY REG_ID, S.CUS_CODE;
 reg_id | cus_code | totsales
--------+----------+----------
      1 |    10012 |   287.91
      1 |    10013 |    64.32
      2 |    10014 |   494.71
      2 |    10019 |    39.95
      3 |    10010 |   180.26
      3 |    10011 |   130.89
      3 |    10015 |   325.82
      3 |    10016 |   179.22
      4 |    10017 |   419.66
      4 |    10018 |   129.32
(10 rows)
```

[Can use the following for similar result. I think the difference is that you are asking for total sales BY region and customer and the below experiment (not my answer) gives total sales BY region and customer and total sales OF region. Is that correct interp?]

```
saleco_dw=> select reg_id, s.cus_code, sum(sale_units*sale_price) as totalsales
from dwdaysalesfact s, dwcustomer c
where s.cus_code = c.cus_code
group by rollup (reg_id, s.cus_code) order by reg_id, s.cus_code;
```

```
 reg_id | cus_code | totalsales
--------+----------+------------
      1 |    10012 |     287.91
      1 |    10013 |      64.32
      1 |          |     352.23
      2 |    10014 |     494.71
      2 |    10019 |      39.95
      2 |          |     534.66
      3 |    10010 |     180.26
      3 |    10011 |     130.89
      3 |    10015 |     325.82
      3 |    10016 |     179.22
      3 |          |     816.19
      4 |    10017 |     419.66
      4 |    10018 |     129.32
      4 |          |     548.98
        |          |    2252.06
(15 rows)
```

2. Write and execute the SQL command to list the total sales by customer, month and product. Here's my answer:

```
SELECT S.CUS_CODE, T.TM_MONTH, P.P_CODE, SUM(SALE_UNITS*SALE_PRICE) AS
TOTSALES
FROM DWDAYSALESFACT S JOIN DWCUSTOMER C ON S.CUS_CODE = C.CUS_CODE JOIN
DWTIME T ON T.TM_ID = S.TM_ID JOIN DWPRODUCT P ON S.P_CODE = P.P_CODE
GROUP BY S.CUS_CODE, T.TM_MONTH, P.P_CODE
ORDER BY S.CUS_CODE, T.TM_MONTH, P.P_CODE;
```

```
saleco_dw=> SELECT S.CUS_CODE, T.TM_MONTH, P.P_CODE, SUM(SALE_UNITS*SALE_PRICE)
AS TOTSALES
FROM DWDAYSALESFACT S JOIN DWCUSTOMER C ON S.CUS_CODE = C.CUS_CODE JOIN DWTIME T
 ON T.TM_ID = S.TM_ID JOIN DWPRODUCT P ON S.P_CODE = P.P_CODE
GROUP BY S.CUS_CODE, T.TM_MONTH, P.P_CODE
ORDER BY S.CUS_CODE, T.TM_MONTH, P.P_CODE;
 cus_code | tm_month |  p_code  | totsales
----------+----------+----------+----------
    10010 |       10 | 13-Q2/P2 |    74.95
    10010 |       10 | 23109-HB |    19.90
    10010 |       10 | 54778-2T |    14.97
    10010 |       10 | PVC23DRT |    70.44
    10011 |       10 | 2232/QTY |   109.92
    10011 |       10 | SM-18277 |    20.97
    10012 |        9 | SM-18277 |    20.97
    10012 |       10 | 23109-HB |     9.95
    10012 |       10 | 89-WRE-Q |   256.99
    10013 |       10 | 13-Q2/P2 |    29.98
    10013 |       10 | 54778-2T |     4.99
    10013 |       10 | PVC23DRT |    29.35
    10014 |        9 | 13-Q2/P2 |    14.99
    10014 |        9 | 2232/QTY |   109.92
    10014 |        9 | 23109-HB |     9.95
    10014 |       10 | WR3/TT3  |   359.85
    10015 |        9 | 2238/QPD |    38.95
    10015 |        9 | 23109-HB |     9.95
    10015 |        9 | 54778-2T |     9.98
    10015 |        9 | 89-WRE-Q |   256.99
    10015 |       10 | 23109-HB |     9.95
    10016 |        9 | 13-Q2/P2 |   104.93
    10016 |        9 | 1546-QQ2 |    39.95
    10016 |        9 | 54778-2T |     4.99
    10016 |        9 | PVC23DRT |    29.35
    10017 |        9 | 13-Q2/P2 |    14.99
    10017 |        9 | 23109-HB |    29.85
    10017 |        9 | 54778-2T |    14.97
    10017 |        9 | WR3/TT3  |   359.85
    10018 |        9 | 2238/QPD |    38.95
    10018 |        9 | 23109-HB |     9.95
    10018 |        9 | 54778-2T |     9.98
    10018 |        9 | PVC23DRT |    70.44
    10019 |        9 | 1546-QQ2 |    39.95
(34 rows)
```

[MY ANSWER IS ABOVE. My SQL in lower case below retrieves total sales BY and total sales OF customer, month, and product. I am just experimenting.]

```
select s.cus_code, t.tm_month, p.p_code, sum(sale_units*sale_price) as totalsales
from dwdaysalesfact s, dwcustomer c, dwtime t, dwproduct p
where s.cus_code = c.cus_code and s.tm_id = t.tm_id and s.p_code = p.p_code
group by rollup (s.cus_code, t.tm_month, p.p_code) order by s.cus_code, t.tm_month, p.p_code;
```

```
saleco_dw=> select s.cus_code, t.tm_month, p.p_code, sum(sale_units*sale_price) as totalsales
                                                                                from dwdaysalesfact
s, dwcustomer c, dwtime t, dwproduct p
where s.cus_code = c.cus_code and s.tm_id = t.tm_id and s.p_code = p.p_code
group by rollup (s.cus_code, t.tm_month, p.p_code) order by s.cus_code, t.tm_month, p.p_code;
 cus_code | tm_month |  p_code  | totalsales
----------+----------+----------+------------
    10010 |       10 | 13-Q2/P2 |      74.95
    10010 |       10 | 23109-HB |      19.90
    10010 |       10 | 54778-2T |      14.97
    10010 |       10 | PVC23DRT |      70.44
    10010 |       10 |          |     180.26
    10010 |          |          |     180.26
    10011 |       10 | 2232/QTY |     109.92
    10011 |       10 | SM-18277 |      20.97
    10011 |       10 |          |     130.89
    10011 |          |          |     130.89
    10012 |        9 | SM-18277 |      20.97
    10012 |        9 |          |      20.97
    10012 |       10 | 23109-HB |       9.95
    10012 |       10 | 89-WRE-Q |     256.99
    10012 |       10 |          |     266.94
    10012 |          |          |     287.91
    10013 |       10 | 13-Q2/P2 |      29.98
    10013 |       10 | 54778-2T |       4.99
    10013 |       10 | PVC23DRT |      29.35
    10013 |       10 |          |      64.32
    10013 |          |          |      64.32
    10014 |        9 | 13-Q2/P2 |      14.99
    10014 |        9 | 2232/QTY |     109.92
    10014 |        9 | 23109-HB |       9.95
    10014 |        9 |          |     134.86
    10014 |       10 | WR3/TT3  |     359.85
    10014 |       10 |          |     359.85
    10014 |          |          |     494.71
    10015 |        9 | 2238/QPD |      38.95
    10015 |        9 | 23109-HB |       9.95
    10015 |        9 | 54778-2T |       9.98
    10015 |        9 | 89-WRE-Q |     256.99
    10015 |        9 |          |     315.87
    10015 |       10 | 23109-HB |       9.95
    10015 |       10 |          |       9.95
    10015 |          |          |     325.82
    10016 |        9 | 13-Q2/P2 |     104.93
    10016 |        9 | 1546-QQ2 |      39.95
    10016 |        9 | 54778-2T |       4.99
    10016 |        9 | PVC23DRT |      29.35
    10016 |        9 |          |     179.22
    10016 |          |          |     179.22
    10017 |        9 | 13-Q2/P2 |      14.99
    10017 |        9 | 23109-HB |      29.85
    10017 |        9 | 54778-2T |      14.97
    10017 |        9 | WR3/TT3  |     359.85
    10017 |        9 |          |     419.66
    10017 |          |          |     419.66
    10018 |        9 | 2238/QPD |      38.95
    10018 |        9 | 23109-HB |       9.95
    10018 |        9 | 54778-2T |       9.98
    10018 |        9 | PVC23DRT |      70.44
    10018 |        9 |          |     129.32
    10018 |          |          |     129.32
    10019 |        9 | 1546-QQ2 |      39.95
    10019 |        9 |          |      39.95
    10019 |          |          |      39.95
          |          |          |    2252.06
(58 rows)
```

3. Write and execute the SQL command to list the total sales by customer and by product

```
SELECT S.CUS_CODE, P.P_CODE, SUM(SALE_UNITS*SALE_PRICE) AS TOTSALES
FROM DWDAYSALESFACT S JOIN DWCUSTOMER C ON S.CUS_CODE = C.CUS_CODE JOIN
DWPRODUCT P ON S.P_CODE = P.P_CODE
GROUP BY S.CUS_CODE, P.P_CODE
ORDER BY S.CUS_CODE, P.P_CODE;
```

```
saleco_dw=> SELECT S.CUS_CODE, P.P_CODE, SUM(SALE_UNITS*SALE_PRICE) AS TOTSALES
FROM DWDAYSALESFACT S JOIN DWCUSTOMER C ON S.CUS_CODE = C.CUS_CODE JOIN DWPRODUCT P ON S.P_CODE = P.P_CODE
GROUP BY S.CUS_CODE, P.P_CODE
ORDER BY S.CUS_CODE, P.P_CODE;
 cus_code |  p_code  | totsales
----------+----------+----------
    10010 | 13-Q2/P2 |    74.95
    10010 | 23109-HB |    19.90
    10010 | 54778-2T |    14.97
    10010 | PVC23DRT |    70.44
    10011 | 2232/QTY |   109.92
    10011 | SM-18277 |    20.97
    10012 | 23109-HB |     9.95
    10012 | 89-WRE-Q |   256.99
    10012 | SM-18277 |    20.97
    10013 | 13-Q2/P2 |    29.98
    10013 | 54778-2T |     4.99
    10013 | PVC23DRT |    29.35
    10014 | 13-Q2/P2 |    14.99
    10014 | 2232/QTY |   109.92
    10014 | 23109-HB |     9.95
    10014 | WR3/TT3  |   359.85
    10015 | 2238/QPD |    38.95
    10015 | 23109-HB |    19.90
    10015 | 54778-2T |     9.98
    10015 | 89-WRE-Q |   256.99
    10016 | 13-Q2/P2 |   104.93
    10016 | 1546-QQ2 |    39.95
    10016 | 54778-2T |     4.99
    10016 | PVC23DRT |    29.35
    10017 | 13-Q2/P2 |    14.99
    10017 | 23109-HB |    29.85
    10017 | 54778-2T |    14.97
    10017 | WR3/TT3  |   359.85
    10018 | 2238/QPD |    38.95
    10018 | 23109-HB |     9.95
    10018 | 54778-2T |     9.98
    10018 | PVC23DRT |    70.44
    10019 | 1546-QQ2 |    39.95
(33 rows)
```

4. Write and execute the SQL command to list the total sales by month and product category. Your output should be sorted by month and product category.

```
SELECT TM_MONTH, P_CATEGORY, SUM(SALE_UNITS*SALE_PRICE) AS TOTSALES
FROM DWDAYSALESFACT S JOIN DWPRODUCT P ON S.P_CODE = P.P_CODE JOIN
DWTIME T ON S.TM_ID = T.TM_ID
GROUP BY TM_MONTH, P_CATEGORY
ORDER BY  TM_MONTH, P_CATEGORY;
```

```
saleco_dw=> SELECT TM_MONTH, P_CATEGORY, SUM(SALE_UNITS*SALE_PRICE) AS TOTSALES
FROM DWDAYSALESFACT S JOIN DWPRODUCT P ON S.P_CODE = P.P_CODE JOIN DWTIME T ON S
.TM_ID = T.TM_ID
GROUP BY TM_MONTH, P_CATEGORY
ORDER BY  TM_MONTH, P_CATEGORY;
 tm_month | p_category | totsales
----------+------------+----------
        9 | CAT1       |   174.83
        9 | CAT2       |   446.81
        9 | CAT3       |   537.54
        9 | CAT4       |    80.67
       10 | CAT1       |   124.89
       10 | CAT2       |   366.91
       10 | CAT3       |   459.64
       10 | CAT4       |    60.77
(8 rows)
```

5. Write and execute the SQL command to list the number of product sales (number of rows) and total sales by month. Your output should be sorted by month.

```
SELECT COUNT(TM_MONTH) AS NUM_SALES, SUM(SALE_UNITS*SALE_PRICE) AS
TOTSALES
FROM DWDAYSALESFACT S JOIN DWTIME T ON S.TM_ID = T.TM_ID
GROUP BY TM_MONTH
ORDER BY  TM_MONTH;
```

```
postgres=> SELECT COUNT(TM_MONTH) AS NUM_SALES, SUM(SALE_UNITS*SALE_PRICE) AS TOTSALES

FROM DWDAYSALESFACT S JOIN DWTIME T ON S.TM_ID = T.TM_ID
GROUP BY TM_MONTH
ORDER BY  TM_MONTH;
 num_sales | totsales
-----------+----------
        23 |  1239.85
        13 |  1012.21
(2 rows)
```

6. Write and execute the SQL command to list the number of product sales (number of rows) and total sales by month and product category. Your output should be sorted by month and product category.

```
SELECT TM_MONTH, P_CATEGORY, COUNT(TM_MONTH) AS NUM_SALES,
SUM(SALE_UNITS*SALE_PRICE) AS TOTSALES
FROM DWDAYSALESFACT S JOIN DWTIME T ON S.TM_ID = T.TM_ID JOIN DWPRODUCT P
ON S.P_CODE =P.P_CODE
GROUP BY TM_MONTH, P_CATEGORY
ORDER BY  TM_MONTH, P_CATEGORY;
```

```
postgres=> SELECT TM_MONTH, P_CATEGORY, COUNT(TM_MONTH) AS NUM_SALES, SUM(SALE_UNITS*SA
LE_PRICE) AS TOTSALES
FROM DWDAYSALESFACT S JOIN DWTIME T ON S.TM_ID = T.TM_ID JOIN DWPRODUCT P ON S.P_CODE =
P.P_CODE
GROUP BY TM_MONTH, P_CATEGORY
ORDER BY  TM_MONTH, P_CATEGORY;
 tm_month | p_category | num_sales | totsales
----------+------------+-----------+----------
        9 | CAT1       |         8 |   174.83
        9 | CAT2       |         4 |   446.81
        9 | CAT3       |         5 |   537.54
        9 | CAT4       |         6 |    80.67
       10 | CAT1       |         4 |   124.89
       10 | CAT2       |         2 |   366.91
       10 | CAT3       |         3 |   459.64
       10 | CAT4       |         4 |    60.77
(8 rows)
```

7. Write and execute the SQL command to list the number of product sales (number of rows) and total sales by month, product category and product. Your output should be sorted by month, product category and product.

```
SELECT TM_MONTH, P_CATEGORY, S.P_CODE, COUNT(TM_MONTH) AS NUM_SALES,
SUM(SALE_UNITS*SALE_PRICE) AS TOTSALES
FROM DWDAYSALESFACT S JOIN DWTIME T ON S.TM_ID = T.TM_ID JOIN DWPRODUCT P
ON S.P_CODE =P.P_CODE
GROUP BY TM_MONTH, P_CATEGORY, S.P_CODE
ORDER BY  TM_MONTH, P_CATEGORY, S.P_CODE;
```

```
postgres-> FROM DWDAYSALESFACT S JOIN DWTIME T ON S.TM_ID = T.TM_ID JOIN DWPRODUCT P ON
 S.P_CODE =P.P_CODE
postgres-> GROUP BY TM_MONTH, P_CATEGORY, S.P_CODE
postgres-> ORDER BY  TM_MONTH, P_CATEGORY, S.P_CODE;
 tm_month | p_category |  p_code  | num_sales | totsales
----------+------------+----------+-----------+----------
        9 | CAT1       | 13-Q2/P2 |         4 |   134.91
        9 | CAT1       | 54778-2T |         4 |    39.92
        9 | CAT2       | 1546-QQ2 |         2 |    79.90
        9 | CAT2       | 2232/QTY |         1 |   109.92
        9 | CAT2       | 89-WRE-Q |         1 |   256.99
        9 | CAT3       | 2238/QPD |         2 |    77.90
        9 | CAT3       | PVC23DRT |         2 |    99.79
        9 | CAT3       | WR3/TT3  |         1 |   359.85
        9 | CAT4       | 23109-HB |         5 |    59.70
        9 | CAT4       | SM-18277 |         1 |    20.97
       10 | CAT1       | 13-Q2/P2 |         2 |   104.93
       10 | CAT1       | 54778-2T |         2 |    19.96
       10 | CAT2       | 2232/QTY |         1 |   109.92
       10 | CAT2       | 89-WRE-Q |         1 |   256.99
       10 | CAT3       | PVC23DRT |         2 |    99.79
       10 | CAT3       | WR3/TT3  |         1 |   359.85
       10 | CAT4       | 23109-HB |         3 |    39.80
       10 | CAT4       | SM-18277 |         1 |    20.97
(18 rows)
```